

Code Division Multiple Access Wireless System With Closed Loop Mode
Using Ninety Degree Phase Rotation And Beamformer Verification

ABSTRACT OF THE DISCLOSURE

A wireless communication system (10). The system comprises a user station (12). The user station comprises despreading circuitry (22) for receiving and despreading a plurality of slots received from at least a first transmit antenna (A12₁) and a second 5 transmit antenna (A12₂) at a transmitting station (14). Each of the plurality of slots comprises a first channel (DPCH) comprising a first set of pilot symbols and a second channel (PCCPCH) comprising a second set of pilot symbols. The user station further comprises circuitry (50) for measuring a first channel measurement ($\alpha_{1,n}$) for each given slot in the plurality of slots from the first transmit antenna and in response to the first set 10 of pilot symbols in the given slot. The user station further comprises circuitry (50) for measuring a second channel measurement ($\alpha_{2,n}$) for each given slot in the plurality of slots from the second transmit antenna and in response to the first set of pilot symbols in the given slot. The user station further comprises circuitry (52) for measuring a phase 15 difference value ($\phi_2(n)$) for each given slot in the plurality of slots in response to the first channel measurement and the second channel measurement for the given slot and in response to a ninety degree rotation of the given slot relative to a slot which was received by the despreading circuitry immediately preceding the given slot.